

IN THE CLAIMS:

2. (Currently Amended) In a laser scanning microscope with an AOTF (acousto-optic tunable filter) in the laser input-coupling beam path, an improvement comprising:

a temperature gauge being provided in one of the environment of the AOTF and the vicinity thereof and connected therewith;

means for one of cooling and heating of the AOTF and its environment; and wherein said means for one of heating and cooling includes regulation of said AOTF and its environment to a constant temperature value-; wherein the temperature gauge is connected to one of heating and cooling means by an electronic control for regulating the temperature; and wherein said electronic control is located outside of the environment of the AOTF.

4. (Previously Amended) The laser scanning microscope according to claim 2, wherein heating is carried out to a value above expected laboratory conditions.

5. (Original) The laser scanning microscope according to claim 4, wherein the value is above 35 degrees Centigrade.

7. (Cancelled)

8. (Previously Amended) The laser scanning microscope according to claim 2, wherein the temperature gage is connected with a driving unit for the AOTF.

9. (Previously Amended) In a laser scanning microscope with an AOTF (acousto-optic tunable filter) in the laser input-coupling beam path, an improvement comprising:

a temperature gauge being provided in one of the environment of the AOTF and the vicinity thereof and connected therewith;

means for one of cooling and heating at least one of the AOTF and its environment; and wherein said means for one of heating and cooling includes regulation of said at least one of the AOTF and its environment to a constant temperature value and wherein said AOTF is driven by an optimized AOTF frequency to provide a constant laser output in the first order of diffraction.

10. (New) The laser scanning microscope according to claim 2, wherein said electronic control is located as part of a power supply.

11. (New) The laser scanning microscope according to claim 2 wherein said electronic control is part of a driving unit.